

Release notes for ENDF/B Development n-034_Se_082
evaluation

ENDF
B-VII.dev

April 26, 2017

- checkr Warnings:

1. A previous error halted parsing of the current section
MAT=3449, MF= 1, MT=451 (1): Parsing stopped

```
ERROR(S) FOUND IN MAT=3449, MF= 1, MT=451
SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER      251 TO      289
```

- checkr Errors:

1. A variable is outside the allowed ENDF range
MAT=3449, MF= 1, MT=451 (0): Variable range

```
ERROR(S) FOUND IN MAT=3449, MF= 1, MT=451
MOD =      1 OUT OF RANGE      0 -      0      RECORD NUMBER      251
```

2. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 2, MT=151 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3449, MF= 2, MT=151
SECTION 2/151 NOT IN DIRECTORY      RECORD NUMBER      291
```

3. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 1 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 1
SECTION 3/ 1 NOT IN DIRECTORY      RECORD NUMBER      356
```

4. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 2 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 2
SECTION 3/ 2 NOT IN DIRECTORY      RECORD NUMBER      381
```

5. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 4 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 4
SECTION 3/ 4 NOT IN DIRECTORY      RECORD NUMBER      406
```

6. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 16 (0): Directory (b)

```
ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 16
SECTION 3/ 16 NOT IN DIRECTORY      RECORD NUMBER      420
```

7. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 17 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 17
SECTION 3/ 17 NOT IN DIRECTORY RECORD NUMBER 431

8. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 22 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 22
SECTION 3/ 22 NOT IN DIRECTORY RECORD NUMBER 438

9. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 28 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 28
SECTION 3/ 28 NOT IN DIRECTORY RECORD NUMBER 450

10. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 51 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 51
SECTION 3/ 51 NOT IN DIRECTORY RECORD NUMBER 460

11. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 52 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 52
SECTION 3/ 52 NOT IN DIRECTORY RECORD NUMBER 474

12. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 53 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 53
SECTION 3/ 53 NOT IN DIRECTORY RECORD NUMBER 486

13. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 54 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 54
SECTION 3/ 54 NOT IN DIRECTORY RECORD NUMBER 497

14. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 55 (0): Directory (b)

ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 55
SECTION 3/ 55 NOT IN DIRECTORY RECORD NUMBER 508

15. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 56 (0): Directory (b)

- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 56 | |
| SECTION 3/ 56 NOT IN DIRECTORY | RECORD NUMBER 518 |
16. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT= 91 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT= 91 | |
| SECTION 3/ 91 NOT IN DIRECTORY | RECORD NUMBER 528 |
17. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT=102 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT=102 | |
| SECTION 3/102 NOT IN DIRECTORY | RECORD NUMBER 537 |
18. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT=103 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT=103 | |
| SECTION 3/103 NOT IN DIRECTORY | RECORD NUMBER 557 |
19. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT=104 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT=104 | |
| SECTION 3/104 NOT IN DIRECTORY | RECORD NUMBER 570 |
20. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT=105 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT=105 | |
| SECTION 3/105 NOT IN DIRECTORY | RECORD NUMBER 581 |
21. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 3, MT=107 (0): Directory (b)
- | | |
|---|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 3, MT=107 | |
| SECTION 3/107 NOT IN DIRECTORY | RECORD NUMBER 590 |
22. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 2 (0): Directory (b)
- | | |
|--|-------------------|
| ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 2 | |
| SECTION 4/ 2 NOT IN DIRECTORY | RECORD NUMBER 606 |
23. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 16 (0): Directory (b)

- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 16 | | |
| | SECTION 4/ 16 NOT IN DIRECTORY | RECORD NUMBER | 764 |
24. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 17 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 17 | | |
| | SECTION 4/ 17 NOT IN DIRECTORY | RECORD NUMBER | 775 |
25. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 22 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 22 | | |
| | SECTION 4/ 22 NOT IN DIRECTORY | RECORD NUMBER | 786 |
26. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 28 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 28 | | |
| | SECTION 4/ 28 NOT IN DIRECTORY | RECORD NUMBER | 797 |
27. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 51 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 51 | | |
| | SECTION 4/ 51 NOT IN DIRECTORY | RECORD NUMBER | 808 |
28. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 52 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 52 | | |
| | SECTION 4/ 52 NOT IN DIRECTORY | RECORD NUMBER | 833 |
29. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 53 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 53 | | |
| | SECTION 4/ 53 NOT IN DIRECTORY | RECORD NUMBER | 856 |
30. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 54 (0): Directory (b)
- | | | | |
|--|---|---------------|-----|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 54 | | |
| | SECTION 4/ 54 NOT IN DIRECTORY | RECORD NUMBER | 879 |
31. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 55 (0): Directory (b)

- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 55 | |
| | SECTION 4/ 55 NOT IN DIRECTORY | RECORD NUMBER 902 |
32. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 56 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 56 | |
| | SECTION 4/ 56 NOT IN DIRECTORY | RECORD NUMBER 925 |
33. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 4, MT= 91 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 4, MT= 91 | |
| | SECTION 4/ 91 NOT IN DIRECTORY | RECORD NUMBER 948 |
34. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 5, MT= 16 (0): Directory (b)
- | | | |
|--|---|-------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 5, MT= 16 | |
| | SECTION 5/ 16 NOT IN DIRECTORY | RECORD NUMBER 972 |
35. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 5, MT= 17 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 5, MT= 17 | |
| | SECTION 5/ 17 NOT IN DIRECTORY | RECORD NUMBER 1026 |
36. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 5, MT= 22 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 5, MT= 22 | |
| | SECTION 5/ 22 NOT IN DIRECTORY | RECORD NUMBER 1053 |
37. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 5, MT= 28 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 5, MT= 28 | |
| | SECTION 5/ 28 NOT IN DIRECTORY | RECORD NUMBER 1156 |
38. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=3449, MF= 5, MT= 91 (0): Directory (b)
- | | | |
|--|---|--------------------|
| | ERROR(S) FOUND IN MAT=3449, MF= 5, MT= 91 | |
| | SECTION 5/ 91 NOT IN DIRECTORY | RECORD NUMBER 1212 |

• **psyche** Warnings:

- Gamma width not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 82. L = 0 / AT RESONANCE ENERGY 6.58000E+03 EV. THE GAMMA WIDTH 1.60000E-01 DEVIATES TOO MUCH FROM THE AVERAGE 8.80000E-01 (0): Gamma width

- FILE 2
SECTION 151
ISOTOPE MASS = 82. L = 0
AT RESONANCE ENERGY 6.58000E+03 EV. THE GAMMA WIDTH 1.60000E-01 DEVIATES TOO MUCH FROM THE AV
2. Gamma width not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 82. L = 0 / AT RESONANCE ENERGY 1.44800E+04 EV. THE GAMMA WIDTH 1.60000E-01 DEVIATES TOO MUCH FROM THE AVERAGE 8.80000E-01 (0): Gamma width
- FILE 2
SECTION 151
ISOTOPE MASS = 82. L = 0
AT RESONANCE ENERGY 1.44800E+04 EV. THE GAMMA WIDTH 1.60000E-01 DEVIATES TOO MUCH FROM THE AV
3. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 82. L = 1 / STRENGTH FUNCTION IS 6.37885E-06 / STRENGTH FUNCTION 6.37885E-06 / LIES OUTSIDE LIMITS 1.00000E-04 TO 8.00000E-04 (0): URR str. ftn.
- FILE 2
SECTION 151
ISOTOPE MASS = 82. L = 1
STRENGTH FUNCTION IS 6.37885E-06
STRENGTH FUNCTION 6.37885E-06
... [1 more lines]
4. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.00000E+04. STRENGTH FUNCTION IS 1.20997E-04 / STRENGTH FUNCTION 1.20997E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.
- FILE 2
SECTION 151
ENERGY = 3.00000E+04. STRENGTH FUNCTION IS 1.20997E-04
STRENGTH FUNCTION 1.20997E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
... [1 more lines]
5. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.00000E+04. STRENGTH FUNCTION IS 1.20997E-04 / STRENGTH FUNCTION 1.21000E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.
- FILE 2
SECTION 151
ENERGY = 3.00000E+04. STRENGTH FUNCTION IS 1.20997E-04
STRENGTH FUNCTION 1.21000E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
... [3 more lines]
6. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ENERGY = 3.00000E+04. STRENGTH FUNCTION IS 1.20997E-04 / STRENGTH FUNCTION 1.21001E-04 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.

```

FILE 2
SECTION 151
ENERGY = 3.00000E+04. STRENGTH FUNCTION IS 1.20997E-04
STRENGTH FUNCTION 1.21001E-04
LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04

```

• fudge-4.0 Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

```

WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 2.5 and S = 1.5 for "capture"

```

2. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

```

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.24%

```

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: (z,n) (Error # 0): CS Sum.

```

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.14%

```

• fudge-4.0 Errors:

1. Calculated and tabulated Q values disagree.
reaction label 10: n + H1 + As81 (Error # 0): Q mismatch

```

WARNING: Calculated and tabulated Q-values disagree: -12345572.25923157 eV vs -1.22396e7 eV!

```

2. Calculated and tabulated Q values disagree.
reaction label 11: Se83 + gamma (Error # 0): Q mismatch

```

WARNING: Calculated and tabulated Q-values disagree: 5822065.760650635 eV vs 5895390. eV!

```

3. Calculated and tabulated Q values disagree.
reaction label 12: n + He4 + Ge78 (Error # 0): Q mismatch

```

WARNING: Calculated and tabulated Q-values disagree: -8152613.961212158 eV vs -8247880. eV!

```

4. Calculated and tabulated Q values disagree.
reaction label 13: H1 + As82-s (Error # 0): Q mismatch

```

WARNING: Calculated and tabulated Q-values disagree: -6483553.780532837 eV vs -6613520. eV!

```

5. Calculated and tabulated Q values disagree.
reaction label 14: H2 + As81-s (Error # 0): Q mismatch

```

WARNING: Calculated and tabulated Q-values disagree: -10121006.15829468 eV vs -9929510. eV!

```

6. Calculated and tabulated Q values disagree.
reaction label 15: H3 + As80-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -12309112.52032471 eV vs -1.24005e7 eV!

7. Calculated and tabulated Q values disagree.
reaction label 16: He4 + Ge79_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -2454981.825958252 eV vs -2361780. eV!

• njoy2012 Warnings:

1. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 16
only mf4/mf5 provided

2. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 17
only mf4/mf5 provided

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 22
only mf4/mf5 provided

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 28
only mf4/mf5 provided

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
group...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

---message from conver---cannot do complete particle production for mt= 91
only mf4/mf5 provided